

App. Serial No. 10/526,194
Docket No.: CH020032US

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In the Claims:

Please amend claims 1, 5-6, 10, 12 and 16-17 as indicated below. This listing of claims replaces all prior versions.

1. (Currently amended) A ~~[[C]]~~ continuous-time filter system ~~with self-calibration means,~~
~~the system~~ comprising:

a master control unit and a slave unit with at least one slave filter, ~~[[-]]~~ the master control unit ~~comprising~~ including

~~[[-]]~~ an integrator having a transconductor and a capacitor which match those elements of the slave filter that define a time constant of the slave filter's time constant,

~~[[-]]~~ a voltage comparator connected to a variable threshold voltage and to an output of the integrator, the voltage comparator providing an output frequency signal, and

~~[[-]]~~ and a phase frequency comparator providing a control signal as an output signal, the phase frequency comparator receiving said output frequency signal Θ and a reference frequency signal (f_{ref}) as input signals~~[[.]]~~; and

the slave unit ~~comprising~~ including said at least one slave filter;

~~—the slave filter having a control signal input for receiving that uses the said control signal thus allowing to calibrate the slave filter's transfer function by influencing to influence the slave filter's time constant and therein facilitate calibration of a transfer function of the slave filter.~~

2. (Previously presented) The system of claim 1, wherein the slave filter is an RC-filter and the control signal is a discrete signal leading to a calibration of the slave filter's transfer function in steps.
3. (Previously presented) The system of claim 1, wherein the slave filter is a continuous-time Gm-C-filter and the control signal is a continuous signal.
4. (Previously presented) The system of claim 1, wherein the slave filter is an integrated

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filter.

5. (Currently amended) The system of claim 1 ~~one of the preceding claims~~, wherein the master control unit comprises one transconductor and one capacitor only.

6. (Currently amended) The system of one claim 1, wherein the phase frequency comparator comprises:

- [[-]] a loop filter (52) providing the control signal as output signal,
- [[-]] a phase frequency detector situated in front of the loop filter, the phase frequency detector receiving said output frequency signal and a reference frequency signal as input signals, and
- [[-]] an error signal representing the phase difference between the output frequency signal and the reference frequency signal being fed by the phase frequency detector to the loop filter.

7. (Previously presented) The system of claim 1, wherein the master control unit comprises a switch being controllable by a signal.

8. (Canceled)

9. (Previously presented) The system of claim 1, wherein a DC voltage is applied to an input of the integrator.

10. (Currently amended) The system of claim 1, wherein the integrator has a transconductance that can be tuned by varying

- [[-]] a threshold voltage being applied to an input of the voltage comparator, and/or
- [[-]] a DC voltage being applied to an input of the integrator, and/or
- [[-]] the frequency of a clock signal.

11. (Canceled)

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12. (Currently amended) The system of claim 1, wherein the integrator has a transconductance (G_m) that can be tuned by varying a DC voltage being applied to an input of the integrator while keeping a threshold voltage being applied to an input of the voltage comparator and the reference frequency signal unchanged.

13. (Previously presented) The system of claim 1, wherein the integrator has a transconductance that can be tuned by varying a threshold voltage being applied to an input of the voltage comparator while keeping a DC voltage being applied to an input of the integrator and the reference frequency signal unchanged.

14. (Previously presented) The system of claim 1, wherein the transconductor comprises a voltage-to-current converter that includes a programmable resistor array or a programmable capacitor array.

15. (Previously presented) The system of claim 1, further embodied in a telecommunication system, video-signal processing system, or disk driver system.

16. (Currently amended) Δ [[C]]continuous-time filter system comprising:

a master control unit a slave unit with a least one slave filter,

the master control unit ~~comprising~~ including

an integrator having a transconductor and a capacitor that match those elements of the slave filter that define a time constant of the slave filter's time constant,

a voltage comparator connected to a variable threshold voltage and to an output of the integrator, the voltage comparator providing an output frequency signal, and

a phase frequency comparator providing a control signal as an output signal, the phase frequency comparator receiving said output frequency signal and a reference frequency signal as input signals; and

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the slave unit ~~comprising~~ including said at least one slave filter, ~~the slave filter having a control signal input for receiving said that uses the control signal thus allowing to calibrate the slave filter's transfer function by influencing to influence~~ the slave filter's time constant and therein facilitate calibration of a transfer function of the slave filter,

wherein the master control unit ~~comprises~~ includes a switch being controllable by a signal (V_s), and wherein a logic circuit is ~~employed in order~~ is used to provide[[d]] the signal and the reference frequency signal from a clock signal.

17. (Currently amended) A [[C]]continuous-time filter system comprising:

a master control unit a slave unit with a least one slave filter,
the master control unit ~~comprising~~ including

an integrator having a transconductor and a capacitor that match those elements of the slave filter that define a time constant of the slave filter's time constant,

a voltage comparator connected to a variable threshold voltage and to an output of the integrator, the voltage comparator providing an output frequency signal, and

a phase frequency comparator providing a control signal as an output signal, the phase frequency comparator receiving said output frequency signal and a reference frequency signal as input signals; and

the slave unit ~~comprising~~ including said at least one slave filter, ~~the slave filter having a control signal input for receiving said that uses the control signal thus allowing to calibrate the slave filter's transfer function by influencing to influence~~ the slave filter's time constant and therein facilitate calibration of a transfer function of the slave filter,

wherein the integrator has a transconductance that can be tuned by varying an input clock frequency of a clock signal while keeping a threshold voltage being applied to an input of the voltage comparator and a DC voltage being applied to an input of the integrator unchanged.